

FIREBOAT JOHN J. HARVEY
Pier 63, North River
New York
New York County
New York

HAER NY-335
NY-335

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

HISTORIC AMERICAN ENGINEERING RECORD
National Park Service
U.S. Department of the Interior
1849 C Street NW
Washington, DC 20240-0001

HISTORIC AMERICAN ENGINEERING RECORD

FIREBOAT JOHN J. HARVEY

HAER No. NY-335

LOCATION: Pier 63, North River, New York, New York County, New York

PRESENT OWNER: John J. Harvey Ltd.

PRESENT USE: Museum exhibit

SIGNIFICANCE STATEMENT:

When completed in 1931, Fireboat JOHN J. HARVEY utilized gasoline engines, marking the transition from steam power to gasoline. Although altered in 1957 to replace the original gasoline engines with diesel ones, HARVEY remains an intact example of an early twentieth century fireboat and remains operational, last used during the September 11, 2001 attack on the World Trade Center.

PROJECT INFORMATION:

The Historic American Engineering Record (HAER) is a long-range program that documents and interprets historically significant engineering sites and structures in the United States. HAER is part of Heritage Documentation Programs, a part of the National Park Service, United States Department of the Interior. Todd Croteau, HAER Maritime Program Coordinator, managed the project. Gerald Weinstein donated the large format photographs to HAER in 2005. Justine Christianson, HAER Historian, compiled the data pages in 2007.

PART I. HISTORICAL INFORMATION

A. Physical History

1. Dates of Construction: Plans for Fireboat JOHN J. HARVEY were completed in 1928 and construction began in 1931, with launching taking place on October 6. By December 17, 1931, the fireboat had been completed.
2. Architect/Engineer: Henry J. Gielow, Inc., naval architects
3. Builder/Contractor/Supplier: Todd Shipbuilding and Dry-Dock Corporation, 23rd Street, Gowanus Bay, Brooklyn, New York
4. Original Plans: As built, Fireboat JOHN J. HARVEY was a riveted, steel hulled ship powered by five gasoline engines. The total cost was \$594,000.
5. Alterations and Additions: The most substantial alteration to the fireboat was the 1957 replacement of the original gasoline engines with five 600 horsepower Fairbanks-Morse diesel engines due to concern about explosions. The original architect, Henry Gielow, designed the alteration, and RTC Shipbuilding of Camden, New Jersey, installed the diesels. Since the diesels were installed in the same location as the original gasoline engines, the location of the electrical systems and pumps did not have to be altered.¹ Minor alterations as a result of the diesel installation included adding two small stacks and extending the deckhouse 3'.

In the late 1970s, HARVEY was taken out of service so the electrical system could be updated. G. Marine & Diesel of Brooklyn, New York, won the contract to "rewind the original generators and motors, and replace all cables and controls" for a total price of \$561,000. HARVEY went back to work in 1981.²

In June 2000, HARVEY was drydocked at Caddell Drydock & Repair Company in Staten Island for hull cleaning. A new protective coating was applied to the hull, and work was done on her propellers and running gear.³

¹ See Al Trojanowicz (author) and Mark Peckham (editor), JOHN J. HARVEY, Fireboat, National Register of Historic Places Registration Form, November 1999, and JOHN J. HARVEY website, "Proud History-Engines," <http://www.fireboat.org/history/engines.asp> and "Proud History-Engineering," <http://www.fireboat.org/history/engineering.asp>, both accessed March 2007.

² Trojanowicz, Statement of Significance.

³ See "Proud History-Restoration," <http://www.fireboat.org/history/restoration.asp>, accessed March 2007.

B. Historical Context:

Fireboats are basically “floating pumping stations with an unlimited supply of water,” using a pump to draw water from sea chests in the hull up to the firefighting equipment on deck.⁴ New York City firefighters developed the first fireboat in 1809, which consisted basically of a boat with a hand pump onboard. With the onset of the Industrial Revolution and resulting increase in trade, the need for fireboats increased as ports became busier and more crowded. In the first generation of fireboats (built pre-1894), it was difficult to move the boat and operate the pump. Furthermore, since they were often primarily used as tugboats, they were not always available when fire broke out.

In 1873, the first American steam-powered fireboat was built in Boston, WILLIAM F. FLANDERS. Two years later, the Fire Department of New York (FDNY) commissioned WILLIAM F. HAVEMEYER. These were precursors to the second generation of fireboats that used steam power.⁵

The second generation of fireboats developed after 1896. These fireboats were “equipped with multiple, high capacity boilers” that made them “faster, and capable of driving large volumes of water at high pressures without affecting the fireboat’s maneuverability.” In 1918, some experimentation was done using gasoline engines, but concerns about explosions soon led to the use of diesel. By 1927, steam and gasoline powered fireboats were considered obsolete, and “had been decommissioned or were overhauled and retrofitted with the diesel engine or diesel/electric powered motors and centrifugal pumps, which were more efficient and economical to operate.”⁶ The removal of steam machinery also freed up space, so “propulsion and pumping systems could be separated, allowing fireboats to maneuver and pump at the same time.”⁷

Despite the changes in technology, the Fire Department of New York still had ten steam fireboats in the 1920s. Rather than investing in diesel-powered fireboats, however, they chose to build fireboats with gasoline engines.

Fireboat JOHN J. HARVEY was named after John J. Harvey, the pilot of Fireboat THOMAS WILLETT, who died while fighting a fire on MUENCHEN, docked at North River Pier 42 in New York City on February 11, 1930. A series of explosions caused a piece of steel pile to hit Harvey, knocking him overboard and killing him. As a way of

⁴ See “Proud History-A Mobile Pumping Station,” http://www.fireboat.org/history/pump_sta.asp, accessed March 2007.

⁵ Joseph Ockershausen, Hollis Stambaugh, and Seth Kelly, “Fireboats Then and Now, Special Report,” Report 146 of the Major Fires Investigation Project conducted by Varley-Campbell and Associates, Inc./TriData Corporation, U.S. Fire Administration, FEMA, USFA-TR-146, May 2003, 1-2.

⁶ Ockershausen, et al., 2.

⁷ Ockershausen, et al., 2.

honoring him, it was decided that HARVEY, then under construction, would be named for him.⁸

HARVEY served Engine Company 57 from 1931 until 1938, when she was assigned to Engine Company 86. In 1959, Engine Company 86 became Marine Company 2. The station closed in 1991, but quickly reopened the following year when it became apparent that the need for a fireboat still existed. In 1995, HARVEY was sent to the FDNY Marine Repair Shops at Brooklyn Navy Yard and stored for four years before New York City surplused the fireboat. A private group of owners purchased HARVEY at a private auction on February 11, 1999.

HARVEY was involved in fighting many fires, including the 1942 fire that sank the NORMANDIE, an ocean liner. A year later, HARVEY was involved in fighting a fire on EL ESTERO, an ammunition ship. On September 11, 2001, HARVEY reentered service to help at the World Trade Center towers. FDNY assigned an officer to the fireboat and crew worked with two other fireboats, FIRE FIGHTER and MCKEAN, at the seawall pumping water onto the site since the fire hydrants were not working. HARVEY also served as a staging ground for volunteers.⁹

PART II. STRUCTURAL/DESIGN INFORMATION

A. General Description

Fireboat JOHN J. HARVEY measures 130' long, has a 28' beam and a 9' draft, weighing 268 gross tons and could reach speeds of 20 knots. The fireboat's riveted hull was made of 5/8" nickel steel plate.¹⁰ HARVEY is an "engine room operated boat, one of the last left in this country," of a type known as a "bell boat."¹¹ In that configuration, the pilot used telegraphs (early models used bell pulls) to send instructions down to the engineer's station. The engineer sent a telegraph back to the pilot confirming the orders. Another telegraph sent orders concerning the fire pumps and pressure.¹² At first, gasoline engines powered the fireboat, but those were replaced with five diesel engines.

The National Register nomination provides a detailed description of HARVEY and is quoted in part below.

⁸ See "Proud History-John J. Harvey," <http://www.fireboat.org/history/jjh.asp>, accessed March 2007.

⁹ Jonathan Lemire, "Historic Fireboat's Fate: The Scrap Pile," 11/19/2006, *Daily News*; Huntley Gill, "Retired Fireboat Harvey Helps with World Trade Center Disaster," Saturday, September 15, 2001, available at <http://www.fireboat.org/911.asp>, accessed March 2007.

¹⁰ See "Proud History-Construction," <http://www.fireboat.org/history/construction.asp>, and "Proud History-Engineering," <http://www.fireboat.org/history/engineering.asp>, accessed March 2007.

¹¹ See "Proud History-Bell Boat," <http://www.fireboat.org/history/bellboat.asp>, accessed March 2007.

¹² See "Proud History-Engineering," <http://www.fireboat.org/history/engineering.asp>, accessed March 2007.

HARVEY has a “very traditional plumb bow, an elliptical counter stern and graceful sheer lines. Her narrow deckhouse is surmounted by an absolutely vertical pilothouse, behind which is a boat deck with one large and two smaller stacks. The deckhouse contains two companionways (fore and aft) to below-decks, and three companionways, (two exterior) to the pilothouse and boat deck. There are eight deck pipes, or monitors, one at the bow, two above the pilot house, two on a platform level with and aft of the boat deck, and three on an aft tower level with the top of the pilot house.

The hull is a transversely framed, riveted steel structure. There are 73 frames numbered from aft to forward. Frame spacing is 21” on centers reduced to 15” on centers forward of frame 60. Heavy web frames are introduced every 5th or 6th frame in way of the engine room. A full length bar keel is provided and heavy engine girders run fore and aft. At frames 9, 49, and 70, complete watertight bulkheads extend from the top to the bottom of the hull with the bulkhead at frame 49 fitted with a watertight door. Watertight flats, aft of frame 9 and forward of frame 49, are further subdivided. No double bottom is fitted. Nickel steel shell plating is arranged in seven strakes and is generally 3/8” thick. Plating at the large sea intakes is increased to 5/8”. Above the main deck, bulwark plating is 1/4”. Shell plating rivets are mostly 3/4” diameter. The main deck is supported by angle deck beams riveted to the hull frames through brackets. The deckhouse is constructed with 1/4” plate riveted to angle frames.”¹³

B. Mechanical:

The fireboat runs on five diesel engines: “Fairbanks-Morse opposed piston Model 38F5 1/4 which consists of 8 cylinders with 16 pistons.” These replaced the original “5 Sterling Viking II 8 cylinder gasoline engines rated at 565 hp at 1150 rpm.”¹⁴ The diesel engines power generators that make the electricity needed for propulsion. “This power is then channeled through two switchboards where the engineers distribute it. The forward one controls the boat’s many auxiliary electrical systems. A main switchboard aft controls power to *Harvey*’s massive propulsion motors.”¹⁵ The electrical equipment was all manufactured by Westinghouse. HARVEY also had four LeCourtenay centrifugal fire pumps that could pump 4,000 gallons/minute at 150 psi.¹⁶ Fire equipment included eight Morse “Invincible” deckpipes/monitors and two manifolds with twenty-four 3 1/2”

¹³ Trojanowicz, Description.

¹⁴ See “Proud History-Engines,” <http://www.fireboat.org/history/engines.asp>, accessed March 2007; and “Proud History-Engineering,” <http://www.fireboat.org/history/engineering.asp>, accessed March 2007.

¹⁵ See “Proud History-A Powerhouse,” <http://www.fireboat.org/history/powerhouse.asp>, accessed March 2007.

¹⁶ See “Proud History-Engineering,” <http://www.fireboat.org/history/engineering.asp>, accessed March 2007.

connections for fire hoses, located on the main deck aft. There was a total of 4,500' of hose measuring 3 ½", 2 ½" and 1 ½". The deck pipes could put out 20,000 gallons a minute.¹⁷

A condition survey done in 1997 provides information on the mechanics powering the fireboat.

Power is supplied by five 600 h.p. Fairbanks-Morse, opposed piston, diesel engines. These engines, driving six Westinghouse marine generators, provide electrical power for the two 1,065 h.p. electric propulsion motors. Each motor turns its own propellor. Four diesels drive the four LeCourtney centrifugal fire pumps through air clutches. Cross connections in the piping system allow any combination of pumps to provide water to the eight Morse "Invincible" deck monitors. Total output is 16,000 gallons per minute at 150 ppi. Auxiliary equipment includes diesel generator sets, air compressors and motor-generator units. A massive switchboard aft controls exciter and generator current while a smaller switchboard amidships distributes auxiliary and domestic power....An oil fired furnace supplies steam heat.¹⁸

PART III. SOURCES OF INFORMATION

JOHN J. HARVEY website, available at <http://www.fireboat.org>, accessed March 2007.

Ockershausen, Joseph, Hollis Stambaugh, and Seth Kelly. "Fireboats Then and Now, Special Report." Report 146 of the Major Fires Investigation Project conducted by Varley-Campbell and Associates, Inc./TriData Corporation, U.S. Fire Administration, FEMA, USFA-TR-146, May 2003.

Trojanowicz, Al (author) and Mark Peckham (editor). JOHN J. Harvey, Fireboat, National Register of Historic Places Registration Form, November 1999.

¹⁷ See "Proud History-Engineering," <http://www.fireboat.org/history/engineering.asp>, and "Proud History-A Mobile Pumping Station," <http://www.fireboat.org/history/pump.sta.asp>, both accessed March 2007.

¹⁸ Condition survey by Charles C. Deroko, Inc., Brooklyn, New York, conducted March 23, 1997, available at <http://www.fireboat.org/restoration/survey.asp>, accessed March 2007.